Timothy J. O'Connor
Vice President

P.O. Box 63
Lycoming, New York 13093
315.349.1392
315.349.1321 Fax

Constellation Energy
Nine Mile Point Nuclear Station

April 4, 2006

U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit Nos. 1 & 2; Docket Nos. 50-220 & 50-410

Safety Evaluation Report (SER), With Open Items Related to the License Renewal of Nine Mile Point Nuclear Station, dated March 2006 – SER Open Item 3.0.3.2.17-1 (TAC Nos. MC3272 and MC3273)

By NRC letter dated March 3, 2006, Nine Mile Point Nuclear Station, LLC (NMPNS) received the Safety Evaluation Report (SER), With Open Items Related to the License Renewal of Nine Mile Point Nuclear Station. SER Open Item 3.0.3.2.17-1 requested additional information regarding corrosion identified on the Nine Mile Point Unit 1 (NMP1) drywell shell. On March 27, 2006, NMPNS met with the NRC staff to discuss this issue further. Attachment (1) provides the requested information from the SER Open Item and the follow-up meeting. Attachment (2) provides the associated revisions to the NMPNS Amended License Renewal Application. This letter contains one new regulatory commitment.

Should you have questions regarding the information in this submittal, please contact Peter Mazzaferro, NMPNS License Renewal Project Manager, at (315) 349-1019.

Very truly yours,

Timothy J. O'Connor
Vice President Nine Mile Point

A107

STATE OF NEW YORK :
: **TO WIT:**
COUNTY OF OSWEGO :

I, Timothy J. O'Connor, begin duly sworn, state that I am Vice President Nine Mile Point, and that I am duly authorized to execute and file this submittal on behalf of Nine Mile Point Nuclear Station, LLC. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other Nine Mile Point employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Subscribed and sworn before me, a Notary Public in and for the State of New York and County of Oswego, this 4th day of April, 2006.

WITNESS my Hand and Notarial Seal:

Notary Public

My Commission Expires: 4-4-06
Date

SANDRA A. OSWALD
Notary Public, State of New York
No. 01OS6032276
Qualified In Oswego County
Commission Expires 11/25/09

TJO/MRF/sac

Attachments: (1) Requested Information for SER Open Item 3.0.3.2.17-1
(2) Revisions to Amended License Renewal Application

cc: S. J. Collins, NRC
T. G. Colburn, NRC
N. B. Lee, NRC
Resident Inspector, NRC
J. P. Spath, NYSERDA

ATTACHMENT (1)

Requested Information for SER Open Item 3.0.3.2.17-1

Nine Mile Point Nuclear Station, LLC
April 4, 2006

Attachment (1)
Requested Information for SER Open Item 3.0.3.2.17-1

Background
On July 14, 2005, NMPNS submitted an Amended License Renewal Application (ALRA). In Section B2.1.23, ASME Section XI Inservice Inspection (Subsection IWE), under the Operating Experience heading, a reference to a July 23, 2003 Owner Activity Report was made. This report documented a major corrosion (rust) condition on the NMP1 drywell interior surface liner plate that was identified during a scheduled general visual inservice examination (VT-3). The condition was observed on the 225' elevation, near and underneath the drywell area coolers.

During the 2003 NMP1 refueling outage, a general visual examination of 100% of the accessible portions of the interior surface of the drywell shell was performed. Six localized areas, coinciding with the area coolers, were observed to have significant corrosion. In accordance with ASME Section XI Subsection IWE, a detailed visual examination (VT-1) was performed of the six localized areas and characterized the corrosion as 'major', i.e., greater than 5% of the base metal was judged to be lost. A condition report was generated in accordance with the NMPNS Corrective Action Program and a rigorous engineering evaluation was performed.

To ascertain the actual thickness of the drywell shell at these locations, the four most severe locations were chosen by the NMPNS IWE Responsible Engineer to have volumetric (UT) examinations performed. Four individual UT measurements were taken by cleaning the corrosion from the base metal, conducting a continuous scan, and recording the lowest value. The results of the UT examinations ranged from 1.106" to 1.131". The IWE Responsible Engineer compared these results against the minimum design value of 1.049" and concluded that the drywell shell was acceptable for continued service.

Subsequent to the evaluations performed during the 2003 refueling outage, an engineering calculation was performed that projected the time necessary to reach minimum design thickness for the drywell shell. Using the volumetric results (min. 1.106") and minimum design value (1.049"), the available margin was determined to be 57 mils. Using the originally assumed corrosion allowance (62.5 mils over 40 years), it was calculated that it would take 36 years from 2003 to reach the minimum design thickness. This projects out to be the year 2039, which is 10 years beyond the end of the period of extended operation (2029).

Another method, using a newer approved corrosion rate, was also used to project the year that minimum wall thickness would be reached for the drywell shell. NMP uses a corrosion rate of 1.26 mils/yr. in the Torus Corrosion Monitoring Program to evaluate volumetric examination results. This value is documented in a 1994 NRC safety evaluation report. The use of this corrosion rate is appropriate since the material of the drywell shell is essentially the same as the material for the torus shell for the purposes of corrosion resistance. The drywell shell is made of ASTM-212, Gr. B carbon steel whereas the torus shell is made of ASTM-201, Gr. B. The environment in the torus is also the same as, or more severe than, the drywell environment. The torus is approximately half full of demineralized water and the remainder is a nitrogen inerted

atmosphere. The drywell is entirely a nitrogen inerted atmosphere. Therefore, since the materials are essentially the same and the environments are also, it is appropriate to use an approved corrosion rate for the torus for the drywell shell. Performing the calculation, 57 mils of margin divided by 1.26 mils/yr. corrosion rate, yields 45 years until the minimum design thickness of the drywell shell is reached (19 years beyond the end of the period of extended operation).

Based on the above, NMPNS concluded that the NMP1 drywell shell could perform its intended function following the 2003 refueling outage and beyond the period of extended operation. However, NMPNS has also concluded that continued monitoring, in addition to the ASME Section XI Subsection IWE Program, of the drywell shell is necessary. The attributes of this additional monitoring program are described below.

NMP1 Drywell Supplemental Inspection Program

Scope
The scope of the NMP1 Drywell Supplemental Inspection Program includes the areas characterized as having major corrosion (rust) on the NMP1 drywell shell in the NMP Owner Activity Report dated July 23, 2003. These six areas are localized and located near and underneath the drywell area coolers on the 225' elevation. This program invokes aging management activities to the six localized areas in addition to the activities required by the ASME Section XI Inservice Inspection (Subsection IWE) Program.

Preventive Actions
There are no predetermined preventive actions associated with this program. However, NMP engineering may require preventive actions in the future as part of the evaluation of examination results.

Parameters Monitored or Inspected
The six localized areas of the carbon steel drywell shell are examined for evidence of loss of material due to corrosion.

Detection of Aging Effects
Loss of material will be detected by performing a volumetric (ultrasonic thickness measurement) examination. This exam will be conducted during the 2007 refueling outage. Future performances will be based on the results obtained, as described under the Corrective Actions attribute.

Monitoring and Trending
The condition of the localized area wall thickness of the drywell shell is monitored by virtue of the volumetric exam. Trending of the wall thickness results will be performed to determine a rate of material loss and to project the application of that rate to the drywell shell thickness value until the end of the period of extended operation.

Attachment (1)
Requested Information for SER Open Item 3.0.3.2.17-1

Acceptance Criteria

The acceptance criteria will be based upon the calculated corrosion rate and the projected wall thickness at the end of the period of extended operation. The corrosion rate criteria are based on maintaining a wall thickness of greater than the minimum design value. The following table correlates corrosion rates, projected wall thickness at the end of the period of extended operation, and actions that will be taken above those actions required by the ASME Section XI Subsection IWE requirements. The values in the tables, except the corrosion rates, are calculated using the lowest wall thickness reading (1.106") obtained during the 2003 refueling outage. For wall thicknesses greater than 1.106" in 2003, these values are conservative.

Corrosion Rate (mils/year)	Wall Thickness @ End of PEO (inches)	Margin to Design (mils)	Years to Reach Minimum Design Thickness	Actions Beyond IWE Requirements
<0.30	>1.098	>49	>190	None
0.30 – 0.61	1.090 – 1.098	41 – 49	93 – 190	Confirming UT every 10 years
0.62 – 1.25	1.074 – 1.090	25 – 41	45 – 93	Confirming UT every 6 years
1.26 – 2.2	1.049 – 1.074	0 – 25	26 – 45	Confirming UT every 4 years and implement a mitigative strategy
>2.2	<1.049	0	<26	Confirming UT every 2 years and implement a mitigative strategy

Corrective Actions

Actions to be implemented beyond those required by the ASME Section XI Subsection IWE Program are delineated in the table above. A mitigative strategy could include application of a protective coating, repair or replacement of affected sections, or other actions deemed appropriate by the NMP IWE responsible engineer. The Corrective Action Program meets the requirements of 10 CFR Part 50, Appendix B.

Confirmation Process

When acceptance criteria are not met, corrective actions are determined in accordance with the Corrective Action Program. Confirmation that the corrective actions have been completed and are effective will be documented in accordance with the requirements of 10 CFR Part 50, Appendix B.

Administrative Controls

The above stated actions to manage the corrosion of six localized areas on the NMP1 drywell shell will be controlled and documented in the NMP ASME Section XI Subsection IWE Program Plan.

Operating Experience

NMPNS has an existing effective program that continuously reviews internal and external operating experience to determine its applicability and adjusts inspection plans accordingly. The operating experience program will continue to be used to improve the NMP1 Drywell Supplemental Inspection Program.

ATTACHMENT (2)

Revisions to Amended License Renewal Application

Nine Mile Point Nuclear Station, LLC
April 4, 2006

Attachment (2)
Revisions to Amended License Renewal Application

This attachment provides the revision to the NMPNS Amended License Renewal Application (ALRA) based upon the addition of the NMP1 Drywell Supplemental Inspection Program.

ALRA Section 3.5, Aging Management of Structures and Component Supports

Section 3.5.2.A.1, NMP1 Primary Containment Structure

Under the Aging Management Programs heading, add "NMP1 Drywell Supplemental Inspection Program."

Table 3.5.1.A, NMP1 Summary of Aging Management Programs for Structures and Component Supports Evaluated in Chapter II and III of NUREG-1801

For Item 3.5.1.A-12, under the Discussion column, add "NMP1 also credits the NMP1 Drywell Supplemental Inspection Program for localized portions of the drywell shell under Structural Steel (Carbon and Low Alloy Steel) in Air."

Table 3.5.2.A-1, Structures and Component Supports NMP1 Primary Containment Structure – Summary of Aging Management Evaluation

For Structural Steel (Carbon and Low Alloy Steel) in Air, add "NMP1 Drywell Supplemental Inspection Program" to the Aging Management Program column, add "II.B1.1.1-a" to the NUREG-1801 Volume 2 column, add "3.5.1.A-12" to the Table 1 Item column, and add "E, 8" to the Notes column.

Under the Notes for Tables 3.5.2.A-1 through 3.5.2.C-2, add Note 8 – "The NMP1 Drywell Supplemental Inspection Program is credited for the localized areas of the drywell shell identified in NMP1 Owner Activity Report, dated July 23, 2003, in addition to the ASME Section XI Inservice Inspection (Subsection IWE) and 10 CFR Part 50 Appendix J Programs."

ALRA Appendix A, Safety Analysis Report Supplement

Appendix A1, NMP1 Updated Final Safety Analysis Report (UFSAR) Supplement

Add new Subsection A1.1.42, NMP1 Drywell Supplemental Inspection Program with the following text.

"The NMP1 Drywell Supplemental Inspection Program manages the aging effects of localized areas of the NMP1 drywell shell identified as having major corrosion in NMP1 Owner Activity Report dated July 23, 2003. Volumetric examinations will be performed during the 2007 refueling outage and an engineering evaluation will be performed to determine what actions, beyond those required by the ASME Section XI Inservice Inspection (Subsection IWE) Program, are necessary for NMP1 operation through the period of extended operation. Corrective actions could include increased monitoring, application of a protective coating, repair or replacement of affected sections, or other actions deemed appropriate by engineering.

The NMP1 Drywell Supplemental Inspection Program is a new program that will be implemented prior to the period of extended operation."

Under Subsection A1.4, Commitments, add new Commitment #42, "NMPNS will perform volumetric examinations on the NMP1 drywell shell during the 2007 refueling outage and an engineering evaluation will be performed to determine the actions necessary for NMP1 operation through the period of extended operation, in accordance with the NMP1 Drywell Supplemental Inspection Program." The Schedule column entry for this item is "Prior to the Period of Extended Operation."

ALRA Appendix B, Aging Management Programs and Activities

Section B1.5, Aging Management Programs

Add new item 41, "NMP1 Drywell Supplemental Inspection Program (NMP1 Only) (Section B2.1.41) [New]"

Section B2.0, Aging Management Programs

Add to the end of the table in the columns from left to right, "NA"; "Plant Specific Program"; "NMP1 Drywell Supplemental Inspection Program (NMP1 Only) (Section B2.1.41)."

Section B2.1, Aging Management Programs

Add new Subsection B2.1.41, "NMP1 Drywell Supplemental Inspection Program", with the following text.

Program Description

The NMP1 Drywell Supplemental Inspection Program is a new plant-specific program that consists of the appropriate ten elements described in Appendix A of NUREG-1800 (Reference 1). The NMP1 Drywell Supplemental Inspection Program manages aging effects for localized areas of the NMP1 drywell shell identified as having major corrosion in NMP1 Owner Activity Report dated July 23, 2003 (Reference 34). The program provides for volumetric examinations of the localized areas and engineering evaluations to determine actions needed beyond those required by the ASME Section XI Inservice Inspection (Subsection IWE) Program.

Aging Management Program Elements

The key elements of aging management activities, which are used in the NMP1 Drywell Supplemental Inspection Program, are described below. The results of an evaluation against the appropriate ten elements described in Appendix A of NUREG-1800 are provided below.

Attachment (2)
Revisions to Amended License Renewal Application

Scope
The scope of the NMP1 Drywell Supplemental Inspection Program includes the areas characterized as having major corrosion (rust) on the NMP1 drywell shell in the NMP Owner Activity Report dated July 23, 2003. These six areas are localized and located near and underneath the drywell area coolers on the 225' elevation. This program invokes aging management activities to the six localized areas in addition to the activities required by the ASME Section XI Inservice Inspection (Subsection IWE) Program.

Preventive Actions
There are no predetermined preventive actions associated with this program. However, NMP engineering may require preventive actions in the future as part of the evaluation of examination results.

Parameters Monitored or Inspected
The six localized areas of the carbon steel drywell shell are examined for evidence of loss of material due to corrosion.

Detection of Aging Effects
Loss of material will be detected by performing a volumetric (ultrasonic thickness measurement) examination. This exam will be conducted during the 2007 refueling outage. Future performances will be based on the results obtained, as described under the Corrective Actions attribute.

Monitoring and Trending
The condition of the localized area wall thickness of the drywell shell is monitored by virtue of the volumetric exam. Trending of the wall thickness results will be performed to determine a rate of material loss and to project the application of that rate to the drywell shell thickness value until the end of the period of extended operation.

Acceptance Criteria
The acceptance criteria will be based upon the calculated corrosion rate and the projected wall thickness at the end of the period of extended operation. The corrosion rate criteria are based on maintaining a wall thickness of greater than the minimum design value. The following table correlates corrosion rates, projected wall thickness at the end of the period of extended operation, and actions that will be taken above those actions required by the ASME Section XI Subsection IWE requirements. The values in the tables, except the corrosion rates, are calculated using the lowest wall thickness reading (1.106") obtained during the 2003 refueling outage. For wall thicknesses greater than 1.106" in 2003, these values are conservative.

Corrosion Rate (mils/year)	Wall Thickness @ End of PEO (inches)	Margin to Design (mils)	Years to Reach Minimum Design Thickness	Actions Beyond IWE Requirements
<0.30	>1.098	>49	>190	None

Attachment (2)
Revisions to Amended License Renewal Application

Corrosion Rate (mils/year)	Wall Thickness @ End of PEO (inches)	Margin to Design (mils)	Years to Reach Minimum Design Thickness	Actions Beyond IWE Requirements
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>2.2	<1.049	0	<26	Confirming UT every 2 years and implement a mitigative strategy

Corrective Actions
Actions to be implemented beyond those required by the ASME Section XI Subsection IWE Program are delineated in the table above. A mitigative strategy could include application of a protective coating, repair or replacement of affected sections, or other actions deemed appropriate by the NMP IWE responsible engineer. The Corrective Action Program meets the requirements of 10 CFR Part 50, Appendix B.

Confirmation Process
When acceptance criteria are not met, corrective actions are determined in accordance with the Corrective Action Program. Confirmation that the corrective actions have been completed and are effective will be documented in accordance with the requirements of 10 CFR Part 50, Appendix B.

Administrative Controls
The above stated actions to manage the corrosion of six localized areas on the NMP1 drywell shell will be controlled and documented in the NMP ASME Section XI Subsection IWE Program Plan.

Operating Experience
NMPNS has an existing effective program that continuously reviews internal and external operating experience to determine its applicability and adjusts inspection plans accordingly. The operating experience program will continue to be used to improve the NMP1 Drywell Supplemental Inspection Program.

Exceptions to NUREG-1800

None

Enhancements

None

Conclusion

The NMP1 Drywell Supplemental Inspection Program will ensure that the effects of aging associated with the in-scope components will be adequately managed so that there is reasonable assurance that their intended functions will be maintained consistent with the current licensing basis throughout the period of extended operation.